

Patent Claims

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1. A modular structured, portable device for measuring or testing components of optical or electrical networks, with a base module, which contains base electronics and control and display panels located in the front area, and with at least one function module, which is attached externally to the reverse side of the base module via a mechanical interface and which contains a functional unit with measuring or testing electronics, which operates with the base electronic via a functional interface, wherein the function module is attached to the base module and may be replaced with a different function module with a different functional unit, depending upon application.

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2. A device according to claim 1, **wherein** a mechanical interface is attached at a reverse side of the function module through which an additional function module can be attached to the reverse side of the first function module, which contains a different functional unit, which interact through a functional interface with the functional unit of the function module or with the measuring or test electronics.

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3. A device according to claim 2, **wherein** the mechanical interface between function module and base module and the mechanical interface between two function modules are essentially identical.

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4. A device according to claim 1, **wherein** each mechanical interface features quick connectors, which lock in place automatically when the function module is being attached, wherein disengaging means can be used through which the lock can be released to detach the function module.

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5. A device according to claim 1, **wherein** the functional interface between two modules features at least one component at the reverse side of one module and at least a complementary component at the front side of the other module,

wherein these components are shaped in such a manner that they couple automatically when one module is being attached to the other.

6. A device according to claim 1, **wherein** the functional interface between two function modules and the functional interface between function module and base module are essentially identical.
7. A device according to claim 1, **wherein** a final module designed as a protective element is integrated into a reverse side of the last function module.
8. A device according to claim 1, **wherein** a final module is provided, which can be attached via a mechanical interface outside to a reverse side of the last function module.
9. A device according to claim 8, **wherein** the mechanical interface between the function module and the base module is not compatible with the mechanical interface between the final module and the function module.
10. A device according to claim 8, **wherein** the mechanical interface between the function module and the base module and the mechanical interface between the final module and the function module are essentially identical.
11. A device according to claim 1, **wherein** the mechanical interface on one module features at least one stationary retaining hook, which sticks out on one side and engages into a retaining opening on the other module thus reaching behind an opening rim, and where the mechanical interface on one module also features at least one pivoting snap-fit which sticks out on a side opposite to the retaining hook and engages into a lock opening on the other module thus locking in place by reaching behind an opening rim.
12. A device according to claim 11, **wherein** the module with at least one snap-fit features disengaging means, which interact with at least one snap-fit and when operated cause the snap-fit to swivel back by releasing the opening rim.

13. A device according to claim 1, **wherein** the functional interface is designed as an electrical or optical interface.

14. A device according to claim 1, **wherein** the device is designed as a TDR or encompasses a TDR.

15. A device according to claim 1, **wherein** the device is designed as an OTDR or encompasses an OTDR.

16. A device according to claim 1, **wherein** the device is designed as a WDM or encompasses a WDM.

17. A modular device system with a modular structured, portable device according to claim 1 for measuring or testing components of optical or electrical networks, with a base module, which contains base electronics and control and display panels located in the front area, and with at least two function modules, which are interchangeable via a mechanical interface attachable outside on the reverse side of the base module, wherein each function module contains one functional unit with measuring and testing electronics, which interacts at the function module that is attached to the base module with the base electronics via a functional interface, wherein the function modules differ in regards to their functional units.

18. A device system according to claim 17, **wherein** all function modules are equipped with mechanical coding devices, which are coded in such a manner that a functionally nonsensical combination of function modules cannot be installed.

19. A combination of devices according to claim 18, **wherein** the coding of the coding devices is based on the function of the respective functional unit, its power consumption, or the weight of the respective function module.

20. A function module for a device according to claim 1 or for a device system according to claim 17, encompassing a functional unit with measuring or testing electronics, at least one mechanical interface and at least one functional interface.

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